

# THE WELLCOME RESEARCH LABORATORIES

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Dear Professor Lederberg,

Dr. Smith did not quite get the facts right. I have written a chapter for a book on infectious diseases which will be appearing fairly soon. This, however, is on anthrax, not on variation in B. anthracis. The question of variation is treated cursorily and from the practical aspect. The loss of virulence of the Pasteurian strains is closely correlated with loss of immunogenic efficiency. The ability to produce capsules remains unimpaired. Indeed, most of these strains are able to produce capsules on media without the addition of the bicarbonate required by virulent strains. Other widely used attenuated strains are those which have completely lost their ability to produce the polyglutanic acid capsule. Some of these strains are highly immunogenic and are far less virulent than the Pasteur strains. In fact they are not able to produce the characteristic disease.

Some published work bearing on attempts at obtaining a reverse mutation exists. The relevant papers can be got from Tomcsik (1949) Schweig. Zeit. Path. u. Bakt. 12 (5) :489. I have not found any suggestion of spontaneous reversion and have not been able to induce a reversal. However, your vast experience in this field might put a different complexion on the subject.

Some caution is needed in interpreting published papers by workers only casually acquainted with B. anthracis. I have on several occasions been sent putative variants and other curiosities and found them to be other bacilli. Culture collections are sometimes at fault, as it is not difficult to contaminate an anthrax culture with a bacillus - some are markedly anthracidal - and carry on with the wrong organism. I am sending a reprint of some work done many years ago. Do not bother with anything but the discussion and summary. These, for the most part, have been confirmed by present day work.

I am sorry not to be able to be of more assistance.

Yours sincerely,

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